

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application:

1 – 9. (cancelled)

10. (original) A neutron detector comprising a plurality of $^6\text{Li-ZnS}$ films optically coupled to a light guide-thermalizing media comprising a plurality of acrylic layers.

11. (original) The neutron detector of claim 10 comprising at least four $^6\text{Li-ZnS}$ films and at least five acrylic layers.

12. (original) The neutron detector of claim 10 wherein each of the $^6\text{Li-ZnS}$ films has a thickness of about 0.1 mm to about 0.5 mm.

13. (currently amended) The neutron detector of claim 10 wherein each of the ~~high-density polyethylene~~ acrylic layers has a thickness of about 0.5 cm to about 1.5 cm.

14. (original) The neutron detector of claim 10 further comprising a photo-sensor.

15. (original) The neutron detector of claim 10 further comprising a wavelength shifter.

16. (original) A portal detector comprising the neutron detector of claim 10.

17. (original) A handheld instrument comprising the neutron detector of claim 10.

18. (original) A neutron detector comprising:

a thermal neutron sensing scintillator comprising at least four $^6\text{Li-ZnS}$ films interleaved with and optically coupled to a light guide-thermalizing media comprising at least five acrylic layers;

a reflecting surface substantially enveloping said interleaved layers, wherein said reflecting surface comprises a tapered portion extending from an end of said interleaved layers for guiding light to a narrowed section; and

a photo-sensor located at the narrowed section of the tapered portion.

19. (original) A portal detector comprising the neutron detector of claim 18.

20. (original) A handheld instrument comprising the neutron detector of claim 18.